



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|----------------------------|-------------|----------------------|---------------------|------------------|
| 10/526,803 | 11/08/2005 | Sadahiro Hirayama | 113072.129 US1 | 7399 |
| 24395 | 7590 | 03/05/2008 | EXAMINER | |
| WILMERHALE/DC | | | KHATRI, ANIL | |
| 1875 PENNSYLVANIA AVE., NW | | | | |
| WASHINGTON, DC 20004 | | | ART UNIT | PAPER NUMBER |
| | | | 2191 | |
| | | | NOTIFICATION DATE | DELIVERY MODE |
| | | | 03/05/2008 | ELECTRONIC |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

teresa.carvalho@wilmerhale.com
michael.mathewson@wilmerhale.com
sharon.matthews@wilmerhale.com

| | | |
|------------------------------|-------------------------|------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/526,803 | HIRAYAMA ET AL. |
| | Examiner Anil Khatri | Art Unit 2191 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 04 March 2005.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-5 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 04 March 2005 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 6/7/06.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application
- 6) Other: _____.

DETAILED ACTION

Specification

The abstract of the disclosure is objected to because it should contain 150 words and one paragraph. Correction is required. See MPEP § 608.01(b).

The disclosure is objected to because of the following informalities: it recites some foreign language characters (see pages 30-33).

The disclosure is objected to because of the following informalities: because it recites verbatim as claim language.

Appropriate correction is required

Content of Specification

- (a) Title of the Invention: See 37 CFR 1.72(a) and MPEP § 606. The title of the invention should be placed at the top of the first page of the specification unless the title is provided in an application data sheet. The title of the invention should be brief but technically accurate and descriptive, preferably from two to seven words may not contain more than 500 characters.
- (b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.
- (c) Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.
- (d) The Names Of The Parties To A Joint Research Agreement: See 37 CFR 1.71(g).
- (e) Incorporation-By-Reference Of Material Submitted On a Compact Disc: The specification is required to include an incorporation-by-reference of electronic documents that are to become part of the permanent United States Patent and Trademark Office records in the file of a patent application. See 37 CFR 1.52(e) and MPEP § 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text were permitted as electronic documents on compact discs beginning on September 8, 2000.

- (f) Background of the Invention: See MPEP § 608.01(c). The specification should set forth the Background of the Invention in two parts:
 - (1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."
 - (2) Description of the Related Art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."
- (g) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.
- (h) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.
- (i) Detailed Description of the Invention: See MPEP § 608.01(g). A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.
- (j) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet or electronic page (37 CFR 1.52(b)(3)). Where a claim sets forth a plurality of elements or steps, each element or step of the

claim should be separated by a line indentation. There may be plural indentations to further segregate subcombinations or related steps. See 37 CFR 1.75 and MPEP § 608.01(i)-(p).

- (k) Abstract of the Disclosure: See MPEP § 608.01(f). A brief narrative of the disclosure as a whole in a single paragraph of 150 words or less commencing on a separate sheet following the claims. In an international application which has entered the national stage (37 CFR 1.491(b)), the applicant need not submit an abstract commencing on a separate sheet if an abstract was published with the international application under PCT Article 21. The abstract that appears on the cover page of the pamphlet published by the International Bureau (IB) of the World Intellectual Property Organization (WIPO) is the abstract that will be used by the USPTO. See MPEP § 1893.03(e).
- (l) Sequence Listing. See 37 CFR 1.821-1.825 and MPEP §§ 2421-2431. The requirement for a sequence listing applies to all sequences disclosed in a given application, whether the sequences are claimed or not. See MPEP § 2421.02.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-5 are rejected under 35 USC 101 because they disclose a claimed invention that is an abstract idea as defined in the case *In re Warmerdam*, 33, F 3d 1354, 31 USPQ 2d 1754 (Fed. Cir. 1994).

Analysis: Claims 1-5 disclosed by the applicant as being a “requirement definition method...

Since the claims are each a series of steps to be performed on a computer the processes must be analyzed to determine whether they are statutory under 35 USC 101.

Examiner interprets that the claims 1-5 are non-statutory because they do not disclose that how a cited method will be able to carry out its intended results without incorporating a

processor, memory and medium. Therefore, claims 1-5 are an abstract idea and merely manipulation of instruction and mathematical equation to calculates requirement words without producing any useful and concrete results so its functionality can be realized. Thus, claims 1-5 are non-statutory and rejected under 35 USC 101.

Further, examiner interprets that claims 1-5 are non-statutory because claim recites computer program which are program, per se i.e. the description or expressions of the program are not physical things nor are they statutory process as they do not act being performed. Computer programs do not define any structural and functional interrelationship between the computer program and other claimed aspect of the invention which permits the computer program's functionality could be realized. Therefore, computer program is merely a set of instructions capable of being executed by a computer, the computer program itself is not a process.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-5 recites the limitation "prescribing, repeating, executing etc". There is insufficient antecedent basis for this limitation in the claim. Further, language is vague and unclear what applicant intended to achieve, it appears to be missing in the claim for requirement

definition and further steps a-e does not establish relationship for the cited method so intended results can be achieved.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Honiden et al* USPN 5,353,371 in view of *Branch Freeman et al* USPN 7,231,631.

Regarding claims 1-3

Honiden et al teaches,

a) a step of extracting all output data items to be finally obtained by computer software which is a development object (column 7, lines 38-46, if a data transformer consisting of only elements of the data transformer A is present in the decomposed data transformer, it is determined that the data transformer B is similar to the data transformer A, and only data transformers coinciding with the data transformer A are extracted from the data transformer B. Finally, the object synthesis unit 5 synthesizes a program for the data transformer A by utilizing the conversion knowledge added to the extracted data transformers);

(e) a step of executing the steps (a) to (d) with respect to all the output data items to be finally obtained, and constituting requirement definition by the data generation equation and the data generation equation execution condition obtained as a result of such execution (column 7, lines

16-36, The data transformer B is decomposed by the similarity decision unit 2 to generate a data transformer corresponding to a low-level concept immediately below the data transformer B. It is checked if a data transformer consisting of only elements of the data transformer A is present in the decomposed data transformer. If it is determined that no data transformer consisting of only elements of the data transformer A is present in the data transformer corresponding to the low-level concept immediately below the data transformer B, the generated data transformers are further decomposed, and decomposition is performed until each data transformer can no longer be decomposed, i.e., until the number of each of input and output elements of each data transformer becomes 1. When the number of each of input and output elements of each data transformer becomes 1, if there is no data transformer consisting of only elements of the data transformer A in the decomposed data transformer, it is determined that the retrieved data transformer B is semantically different from the data transformer A, and another data transformer C is retrieved in place of the data transformer B);

(d) a step of repeating the step (c) until the data generation equation is constituted only of an input data item (column 4, lines 9-15, The data transformer is constituted by a plurality of data transformers, and data flows among the plurality of data transformers (see FIG. 3A). A given data transformer is detailed (decomposed to lower levels) as follows. The data transformer shown in FIG. 3A is detailed by describing it in a lower-level data transformer shown in FIG. 3B or 3C). *Honiden et al* does not teach explicitly (b) a step of prescribing one of the extracted output data items by a data generation equation and a data generation equation execution condition;

(c) a step of prescribing all new data items by separate data generation equations and data generation equation execution conditions with respect to all the new data items that have appeared in order to prescribe the data generation equation and the data generation equation execution condition in said(b);

b) a step of prescribing one of the extracted output data items by a data generation equation and a data generation equation execution condition (column 3, lines 54-67, Referring to FIG. 4, the code generation process 104 includes receiving (300) a directory and filename where the user 30 wants to save the code. The process 104 generates (302) sting arrays to hold different blocks of code and writes (304) setup code for the results. The process 104 loops (306) through each data structure that represents an element of the results and for each element, examines (308) the data structure to extract details needed to generate code to compute the result and generates (310) code to plot the result (or code to generate text in needed format if the result is text instead of a plot). The process 104 writes (312) the string arrays of code to the file. In another example, writing the string arrays of code to the file is done as the code is generated);

(c) a step of prescribing all new data items by separate data generation equations and data generation equation execution conditions with respect to all the new data items that have appeared in order to prescribe the data generation equation and the data generation equation execution condition in said(b) (column 5, lines 46-54, to store information about fitted models, the GUI 28 and the command line interface both use cfit objects. cfit objects contain

Art Unit: 2191

information needed to re-compute a fitted model given data and contain the coefficients of a model that were computed for a specific set of data. More specifically, the cfit object includes the following properties: category, type, linear or non-linear, linear terms or model equation, coefficient names, coefficient values, dependent variable names, independent variable names and problem variable names). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to incorporate data generation with equation to prove it mathematically. The modification would have been obvious because one of ordinary skill in the art would have been motivated to combine teaching into requirement method process where data can be manipulated and generated with equation to produce exact word and data in the prescribing form to be extracted.

Regarding claims 4-5

Honiden et al teaches,

a name of the word (column 4, lines 24-39, FIG. 4 shows an example of the data transformer A. "LIFT Control System" in FIG. 4 has a function of controlling "LIFT Motor" in accordance with input signals from "LIFT Button" and "Floor Button". The "LIFT Control System" receives "Floor No." signal and "Floor Button" signal from "Floor Button", and outputs "Floor Button Lamp Control" signal to "Floor Button". Similarly, "LIFT Control System" receives "LIFT No." signal and "LIFT Button No," signal from "LIFT Button", and outputs "LIFT Lamp Control" signal to "LIFT Button". "LIFT Control System" outputs "Operation" and "Signal" signals to "Lift Motor" in accordance with control signals from "Floor Button" and "LIFT Button", thereby controlling "LIFT Motor");

(a) an operation of changing (changing including deleting and adding) prescription of the requirement word itself to be changed (column 4, lines 43-55, the function decomposition unit 1 has a function of detailing a given predetermined specification stepwise, and decomposes the data transformer A to a lower-level data transformer (data transformers A')). FIG. 5 shows "LIFT Control System" shown in FIG. 4 which is decomposed to a lower-level data transformer by the function decomposition unit 1. As shown in FIG. 5, "LIFT Control System" is decomposed to "LIFT Button Control", "Floor Button Control", "LIFT Move Indicate", and "Floor Move Indicate" as four data transformers A'. Of the four data transformers, the former two data transformers are those for inputting control signals, and the latter two data transformers are those for controlling "LIFT Motor")

(b) an operation of extracting first link defining words and first link containing words before and after the change of the requirement word concerned as requirement words having a possibility that prescription change is required by an influence of the change of the prescription of the word of the above(a) (column 5, lines 15-25, data transformer B retrieved by the above-mentioned method is stored in the design process intermediate knowledge base 6. In the data transformer B, a conversion knowledge for converting the data transformer B similar to the data transformer A' to a lower-level data transformer (data transformers B') as the next intermediate is additionally described, and is stored in the design process conversion knowledge base 7. Furthermore, the design process conversion knowledge base 7 also stores unit data transformers decomposed to decrease the number of I/Os as much as possible);

(c) an operation of studying whether or not the change of the prescription is required with respect to the individual extracted words (column 7, lines 50-64, The elements of the data transformer B are subtracted from the elements of the data transformer A, and an intermediate is retrieved using the remaining elements as a retrieval key. An intermediate found by the retrieval is represented by a data transformer C. The data transformer C is decomposed in the same manner as in case (1), thereby extracting a conversion knowledge necessary for the data transformer A. The conversion knowledge of the data transformer A, and the conversion knowledge included in the data transformer C and necessary for the data transformer A are merged by the matching decision unit 4 and the design process fusion unit 3. On the basis of the merging result, the object synthesis unit 5 synthesizes a program for the data transformer A); and

(d) an operation of repeating the operations of the (a) to (c) with respect to the word requiring the change (column 4, lines 24-39, FIG. 4 shows an example of the data transformer A. "LIFT Control System" in FIG. 4 has a function of controlling "LIFT Motor" in accordance with input signals from "LIFT Button" and "Floor Button". The "LIFT Control System" receives "Floor No." signal and "Floor Button" signal from "Floor Button", and outputs "Floor Button Lamp Control" signal to "Floor Button". Similarly, "LIFT Control System" receives "LIFT No." signal and "LIFT Button No," signal from "LIFT Button", and outputs "LIFT Lamp Control" signal to "LIFT Button". "LIFT Control System" outputs "Operation" and "Signal" signals to "Lift Motor" in accordance with control signals from "Floor Button" and "LIFT Button", thereby controlling "LIFT Motor"). *Honiden et al* teaches data generation and condition but

does not teach explicitly a data generation equation (including: obtaining a value by an input) to obtain a value corresponding to the word and a condition (data generation equation execution condition) on which the value corresponding to the word is established. However, *Branch Freeman et al* teaches a data generation equation (including: obtaining a value by an input) to obtain a value corresponding to the word (column 3, lines 3-15, As described below, process 100 provides a way to use the GUI 28 interface and generate runnable code from the GUI 28 that re-generates results of the GUI 28. The generated code can be run from a command line interface (not shown) without opening or using the GUI 28. This allows the user 30 to pass the same data set, or any other data set with appropriate characteristics, to the generated code and get desired results. In particular, the user 30 may write a loop that calls the code and processes multiple sets of data. The user 30 can incorporate this generated code into other code they have written. Process 100 allows the user to use the GUI 28 as a way to work interactively in a graphical environment to generate command line code); and

a condition (data generation equation execution condition) on which the value corresponding to the word is established (column 4,lines 50-64, For each fit, the process 400 examines (420) information stored in the fit object needed to generate code to compute the fitted model. The process 400 obtains (422) related exclusion set object information and generates (424) code to compute the needed exclusion sets for this fit. The process 400 generates (426) code to fit the model and saves (428) the code to the fit block. The process 400 writes (430) code to assign variables with the computed coefficients' values wrapped in "if 0" if the user wants to use the model fitted to the original data and generates (432) code to plot the fits that are currently

Art Unit: 2191

plotted including each property of line plotted including prediction bounds. If residuals are plotted, the process 400 writes (434) code to compute and plot residuals including each property of residual lines. The process 400 updates (436) legend information).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anil Khatri whose telephone number is 571-272-3725. The examiner can normally be reached on M-F 8:30-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wei Zhen can be reached on 571-272-3708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



ANIL KHATRI
PRIMARY EXAMINER